

WHAT IS CLAIMED IS:

- 1) A method of producing a cloned non-human mammalian NT embryo, the method comprising introducing metaphase donor genetic material from a species into an oocyte of the same species to yield a cloned non-human mammalian NT embryo.
- 2) The method of claim 1 wherein the donor genetic material introduced into the oocyte comprises a nucleus.
- 3) The method of claim 1 wherein the donor genetic material introduced into the oocyte comprises an isolated nucleus.
- 4) The method of claim 1 wherein the donor genetic material introduced into the oocyte is present in a donor cell.
- 5) The method of claim 4 further comprising fusing the donor cell and the oocyte.
- 6) The method of claim 1 wherein the donor genetic material introduced into the oocyte is obtained from a differentiated cell.
- 7) The method of claim 6 wherein the differentiated cell is selected from the group consisting of a fibroblast, an epithelial cell, a hematopoietic cell, and a lymphocyte.
- 8) The method of claim 7 wherein the epithelial cell is a cumulus cell.
- 9) The method of claim 6 wherein the differentiated cell is obtained from a source selected from the group consisting of a late embryogenic stage embryo, a fetus, an adult, and a cultured cell line.
- 10) The method of claim 1 wherein the donor genetic material comprises transgenic DNA.
- 11) The method of claim 1 further comprising activating the oocyte or the NT embryo.
- 12) The method of claim 11 wherein activating the oocyte occurs before the donor genetic material is introduced into the oocyte.

- 13) The method of claim 11 wherein activating the oocyte or the NT embryo occurs at about the same time the donor genetic material is introduced into the oocyte.
- 14) The method of claim 11 wherein activating the NT embryo occurs after the donor genetic material is introduced into the oocyte.
- 15) The method of claim 11 wherein activating comprises introducing to the oocyte or the NT embryo cytoplasm from a fertilized oocyte.
- 16) The method of claim 11 wherein activating comprises removing the donor genetic material from the NT embryo and introducing the donor genetic material to an enucleated fertilized oocyte.
- 17) The method of claim 11 wherein activating comprises artificially activating the oocyte or the NT embryo.
- 18) The method of claim 11 wherein activating comprises contacting the oocyte or NT embryo with cycloheximide.
- 19) The method of claim 1 further comprising enucleating the oocyte before introducing the donor genetic material.
- 20) The method of claim 1 further comprising enucleating the NT embryo after introducing the donor genetic material to the oocyte, wherein enucleating the NT embryo comprises removal of maternal genetic material.
- 21) The method of claim 1 wherein the oocyte is arrested at metaphase I as a result of exposure to an arresting agent.
- 22) The method of claim 21 wherein the oocyte is enucleated while in metaphase I.
- 23) The method of claim 1 wherein the non-human mammal is a pig.
- 24) The method of claim 1 wherein the non-human mammal is a cow.
- 25) The method of claim 1 further comprising incubating the NT embryo such that the NT embryo undergoes cell division.
- 26) A method of producing a cloned non-human mammal, the method comprising introducing donor genetic material of a species into an oocyte of the same species to yield a cloned non-human mammalian NT

embryo and incubating the NT embryo such that the NT embryo undergoes cell division wherein:

- a) the donor genetic material is at metaphase; and
- b) incubating the NT embryo occurs after transfer of the NT embryo to a host mammal.

27) A method of producing a cloned non-human mammal, the method comprising introducing donor genetic material of a species into an oocyte of the same species to yield a cloned non-human mammalian NT embryo and incubating the NT embryo such that the NT embryo undergoes cell division wherein:

- a) the donor genetic material is at metaphase, and
- b) incubating the NT embryo comprises culturing the NT embryo in vitro until at least the 2-cell stage.

28) The method of claim 27 further comprising transferring the NT embryo to a host mammal of the same species after the in vitro incubation.

29) The method of claim 28 wherein the NT embryo undergoes cell division in the host mammal and develops into a fetus.

30) The method of claim 28 wherein the NT embryo undergoes cell division in the host mammal and develops into an offspring.